

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning at page 5, line 5, has been amended as follows:

Figure 1 is a block diagram of [a] an exemplary prior art multi-layered communication network [according to] which can be used in implementing an embodiment of the invention;

The paragraph beginning at page 5, line 15, has been amended as follows:

Figure 6 is a block diagram of [a] an exemplary prior art computer system on which the invention may be implemented and practiced.

The paragraph beginning at page 6, line 23, has been amended as follows:

Figure 1 illustrates [a] an example of prior art multi-layered communication network 100 to which the invention is applicable. In general, multi-layered communication network 100 includes multi-layered nodes 102, 104, communicatively coupled by transmission medium 106. Although multi-layered communication network 100 may resemble the International Standards Organization (ISO) Open Systems Interconnection (OSI) Reference Model (RM), the invention is applicable to any multi-layered communication network.

The paragraph beginning at page 13, line 13, has been amended as follows:

Figure 6 is a block diagram [which illustrates a] of an exemplary prior art computer system 600 upon which an embodiment of the invention may be implemented. Computer system 600 includes a bus 602 or other communication mechanism for communicating information, and a processor 604 coupled with bus 602 for processing information. Computer system 600 also includes a main memory 606, such as a random access memory (RAM) or other dynamic storage device, coupled to bus 602 for storing information and instructions to be executed by processor 604. Computer system 600 also includes a read only memory (ROM) 608 or other static storage device coupled to bus 602 for storing static information and instructions for processor 604. A storage device 610, such as a magnetic disk or optical disk, is also [provide] provided and coupled to bus 602 for storing information and instructions.

IN THE CLAIMS:

Claim 2 has been amended as follows:

2. (Twice Amended) The method of Claim 1, further including the steps of
 - a) performing a communication protocol layer specific encryption of [the] data [on] to be sent across the communication channel at the first network node, and
 - b) performing a communication protocol layer specific decryption of [the] data [on] received from the communication channel at the second network node.

Claim 20 has been amended as follows:

20. (Amended) A method for providing communication protocol-independent security for data transmitted between a first node and a second node, the method comprising the steps of:

establishing a communication channel between a first network node and a second network node;

establishing a first stream from a first process to the communication channel [in response to] after the establishment of the communication channel, wherein the first stream is encrypted after the first process and before entering the communication channel and the encrypted first stream is independent of any communication protocol layers; and

establishing a second stream from the communication channel to a second process [in response to] after the establishment of the communication channel, wherein the second stream is decrypted after the communication channel and before entering the second process.

Claim 21 has been canceled.

Claim 22 has been amended as follows:

22. (Amended) The method of claim 20, wherein:

the first stream is a first Java stream;

the second stream is a second Java stream;

the step of establishing a communication channel between the first network node and second network node further comprises the step of establishing a Java secure channel between the first network node and second network node;

the step of establishing the first stream [after the first process and before the communication channel further] comprises the step of establishing the first Java stream after the first process and before the Java secure channel; and

the step of establishing a second stream [after the communication channel and before the second process further] comprises the step of establishing the second Java stream after the Java secure channel and before the second process.

Claim 24 has been amended as follows:

24. (Amended) A computer-readable medium carrying one or more sequences of one or more instructions for providing communication protocol-layer independent security for data transmitted between a first node and a second node, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

establishing a communication channel between a first network node and a second network node;

establishing a first stream from a first process to the communication channel [in response to] after the establishment of the communication channel, wherein the first stream is encrypted after the first process and before entering the communication channel and the encrypted first stream is independent of any communication protocol layers; and

establishing a second stream from the communication channel to a second process [in response to] after the establishment of the communication channel, wherein the second stream is decrypted after the communication channel and before entering the second process.

Claim 25 has been canceled.

Claim 26 has been amended as follows:

26. (Amended) The computer-readable medium of claim 24, wherein:

the first stream is a first Java stream;

the second stream is a second Java stream;

the step of establishing a communication channel between the first network node and second network node further comprises the step of establishing a Java secure channel between the first network node and second network node;

the step of establishing the first stream [after the first process and before the communication channel further] comprises the step of establishing the first Java stream after the first process and before the Java secure channel; and

the step of establishing a second stream [after the communication channel and before the second process further] comprises the step of establishing the second Java stream after the Java secure channel and before the second process.

Claim 28 has been amended as follows:

28. (Amended) A communications network providing communication protocol-independent security for data transmitted between a first node and a second node, the communication network performing the steps of:

establishing a communication channel between a first network node and a second network node;

establishing a first stream from a first process to the communication channel [in response to] after the establishment of the communication channel, wherein the first stream is encrypted after the first process and before entering the communication channel and the encrypted first stream is independent of any communication protocol layers; and

establishing a second stream from the communication channel to a second process [in response to] after the establishment of the communication channel, wherein the second stream is decrypted after the communication channel and before entering the second process.

Claim 30 has been amended as follows:

30. (Amended) The communication network of claim 28, wherein:

the first stream is a first Java stream;

the second stream is a second Java stream;

the step of establishing a communication channel between the first network node and second network node further comprises the step of establishing a Java secure channel between the first network node and second network node;

the step of establishing the first stream [after the first process and before the communication channel further] comprises the step of establishing the first Java stream after the first process and before the Java secure channel; and

the step of establishing a second stream [after the communication channel and before the second process further] comprises the step of establishing the second Java stream after the Java secure channel and before the second process.

Claim 32 has been amended as follows:

32. (Amended) A computer data signal embodied in a carrier wave and representing sequences of instructions which, when executed by one or more processor, provide communication protocol-independent security for data transmitted between a first node and a second node, by performing the steps of:

establishing a communication channel between a first network node and a second network node;

establishing a first stream from a first process to the communication channel [in response to] after the establishment of the communication channel, wherein the first stream is encrypted after the first process and before entering the communication channel and the encrypted first stream is independent of any communication protocol layers; and

establishing a second stream from the communication channel to a second process [in response to] after the establishment of the communication channel, wherein the second stream is decrypted after the communication channel and before entering the second process.

Claim 33 has been canceled.

Claim 34 has been amended as follows:

34. (Amended) The computer data signal of claim 32, wherein:

the first stream is a first Java stream;

the second stream is a second Java stream;

the step of establishing a communication channel between the first network node and second network node further comprises the step of establishing a Java secure channel between the first network node and second network node;

the step of establishing the first stream [after the first process and before the communication channel further] comprises the step of establishing the first Java stream after the first process and before the Java secure channel; and

the step of establishing a second stream [after the communication channel and before the second process further] comprises the step of establishing the second Java stream after the Java secure channel and before the second process.